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ABSTRACT

To examine differential sex role orientations as one conceptual area indicative of psychological adjustments to modernization, questionnaires were administered to agriculture and home economics students at the University of Puerto Rico. There were two types of independent variables: parental (residence, educational attainment levels, family income, father's occupational status, mother's employment status) and personal (sex, college classification, residence, high school type and size of graduating class, attitudes toward sex education in the schools, premarital sex, and actual premarital sexual experience. The sex role orientation scale was based on traditional Hispanic attitudes. Analytical methods used to test hypotheses were the t-test, Pearson's correlation, and multiple regression. Hypotheses accepted included: (1) parental--student sex role orientation scores increased as father's occupation scores increased and with increased urban residential experience; (2) personal--females showed more modern sex role orientations than males, and more modern scores were related to increased length of college experience, urban residence, desire for higher education, support for early sex education, and desire for and actual premarital sex. Analysis showed personal characteristics were better predictors of sex role orientations than parental ones. (RS)

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MODERNIZATION AND CHANGING SEX ROLE ORIENTATIONS: THE CASE OF PUERTO RICO

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The process of modernization is a broad one. For this reason students of modernization find satisfying definitions of the phenomenon perennially difficult. Moore (1974) calls modernization:

> ....the total transformation of a traditional or premodern society into the types of technology and associated social organization that characterize the "advanced", economically prosperous, and relatively politically stable nations of the Western World" (1974: 94).

Similar definitions are posited by Eisenstadt, (1966) and Goode (1963a).

Taking a broader perspective, Lauer (1977:302) assumes that modernization is "a general process involving economic growth along with social and cultural development". When speaking of the essence of modernization, Lauer (1977) refers to the main elements within societies which observers view as primary in the general modernization process. Social orders, for instance, may be the essence of the process as well as individuals within social orders.

A standard definition of modernization, contends Horowitz (1972:87), usually includes at least the following: a belief in the primacy of science, or at least in the products of applied engineering; belief in a secular way of conducting affairs; and belief in the need for continuing changes in the society and economy. Beyond that, it often means the intensification of the destruction of local and regional cultures in the name of a national culture and the elimination of native language clusters in the name of

national identity. So modernization may be science for some and internal imperialism for others.

For Smith and Inkeles (1966), the term modernity may refer to two quite different entities. As used to describe a society, "modern" generally refers to such structural factors as a national state characterized by a complex of traits including intensive mechanization and high rates of social mobility. When applied to individuals, "modern" refers to a set of attitudes, values, and ways of feeling and acting, presumably of the sort either generated by or required for effective participation in a modern society (1966:353-377).

Horowitz (1972:378) points out that Smith and Inkeles (1966) identified both structural and attitudinal entities and proposed to link both under the rubric of modernity. The problem with their perspective, said Horowitz (1972), is that measures of modernization have been more readily associated with changes in individual development than with development in the social structure. The difficulty in equating the development process with the presence of modernism or modernization may reflect a lack of precision in terms. Even if it is an asset to be modern, attempts to define modernism still introduce a new set of ideas that differ noticeably from the original concept.

Theories of Modernization

Although much effort has gone toward the development of modernization theory, there is no single generally accepted

theoretical framework. Instead, several perspectives are considered legitimate and useful, and each has its own academic and political adherents. Broadly speaking, five major theoretical approaches have developed. Within these approaches exist varying philosophical presuppositions, divergent social perspectives, distinct strategies of social development, and different and even contradictory prescriptions for modernizing underdeveloped societies. These general perspectives may be enumerated as: (1) the Ideal-Typical Approach, (2) the Diffusion Approach, (3) the Psychological Approach, (4) the Historical Approach of Radical Social Scientists, and (5) the Marxist Approach (Desai, 1976:viii-ix).

It may be sid that the first three approaches have been most prominent in the United States and have been highly supported by its government. The fourth has provided some challenge to the former and offers strong criticism of them. Finally, the Marxist Approach diametrically opposes the four previous theoretical forms in both major postulates and policy formulation(Desai, 1976:vi-svii).

The three initial approaches are described by Nash (1969):

(1) The Ideal-Typical Approach is the index mithod; general features of developed economies are abstracted as an ideal type and then contrasted with the equally ideal typical features of a poor economy and society. Development is viewed as the transformation of one type into another.

(2) The Diffusionist Approach involves the acculturation view of the process of development. The

Atlantic community of developed nations diffuses knowledge, skills, organization, values, technology, and capital to a poor nation until over time, its society, culture, and personnel become variants of that which made the Atlantic community economically successful.

(3) The Psychological Approach is the analysis of the process as it is now going on in the so-called under-developed nations. This approach leads to smaller-scale hypotheses, to a prospective rather than a retrospective view of social change and to a full accounting of the political, social, and cultural context of development (1969:5).

For the most part, the two remaining approaches present severe criticsm of the typically "Western" conceptual modes. Supporters of the Historical Approach are considered radical social scientists; they point to the abstract and formal character of the three previously mentioned approaches. The principles found within them, it is held, are based on a body of deductive theory that searches for elements and traits of human society removed from time and place. The historical character of those theories forces reality into the frame of abstracted dichotomies which are derived deductively. Along with the critique of other approaches, the Historical Approach offers historical studies of both developed and undeveloped societies. Relations between the two are focused upon so as to suggest that interaction is not necessarily a case of benevolence on the part of developed areas. Aside from international conflicts, the so-called radicals contend that internally, developed societies themselves exhibit tension and conflict of varying intensity (Desai, 1976:xiv-xv).

The fifth approach, that of the Marxists, assumes that only through an understanding of the spirit and force of historical capitalism can a viable theory of development be established (Smith, 1976). As Marxists perceive the development question, the capitalist class and colonial exploitation are the historical sources and the contemporary causes of underdevelopment (Desai, 1976:xvi). In a sense, the present global situation includes "bourgeois nations" confronting "proletarian nations" (Omvedt, 1976:122). Marxists maintain that this must be eliminated in order for development to occur.

This organization of approaches to the study of modernization is roughly equivalent to that discussed by Armer and Isaac (1978). In reviewing the determinants of national development, the authors found three general levels at which modernization may be influenced. These levels include: (1) international, (2) societal, and (3) individual. The international level of determinants is similar to that which Nash (1969) calls the diffusionist approach, while the psychological approach is comparable to the individual level of determinants cited by Armer and Isaac (1978). Less similar, but still associated, are Nash's (1969) ideal-typical approach and the societal level of determinants.

Attitudinal Research

Up to this point in modernization research, attitude measurement has been considered by many researchers to be

an appropriate technique. In the Harvard Project on the Social and Cultural Aspects of Development, initiated in 1961, Inkeles (1976) and his associates delved into various methods that gauge what is considered "modernization". They contend that:

> ....sustained development depends on the wide diffusion through the population of certain attitudes, values, dispositions to act, and habits of doing things which, in combination, characterize the "industrial man" and differentiate him from the man of tradition who makes up the bulk of the population in most underdeveloped countries (1976:23).

Individual modernity, as conceptualized in the Harvard Project, is a complex set of inter-related attitudes, values, and behaviors. These fit a theoretically derived model of modern man, at least as he may appear among the common men in developing countries.

The dependent variables investigated in the Harvard research include: time orientation, technical competence, efficacy, trust, dignity, planning, particularism-universalism, new experience, and opinion; educational aspirations and attitudes toward education; aspirations toward advancement for self, children, community, and nation; readiness for change and mobility; political orientations, attitudes, and activities; use of modern and traditional information media; attitudes about family-size and planning; woman's rights and kinship obligations; religious orientations and behavior; social class attitudes, and consumption behavior (Inkeles, 1976:24).

Using data from the Harvard study, Inkeles (1976) visualizes the "modern man" as characterized by: (1) a receptivity to new experiences and an openness to innovation and change, (2) a disposition to form or hold opinions over a large number of problems and issues that arise not only in the immediate environment but also ounside of it, (3) an orientation to the present or future rather than to the past, (4) a belief in planning and organizing as ways of handling life, (5) a mastery of the environment in order to advance individual purposes and goals, rather than complete comination by environmental needs, (6) a confidence that the world is calculable and that other people and institutions can be relied upon to fulfill or meet obligations and responsibilities, (7) an awareness of the dignity of others and a disposition to show respect for them, (8) a faith in science and technology, and (9) a belief in distributive justice, in rewards based upon social contribution and not according to either whim or special properties of the person unrelated to such a contribution (1976:138-150).

In another international study of modernism employing attitudes, Kahl (1968) posits two ideal types: traditional and modern. A variety of profiles may be found between the two. Fourteen conceptual areas are consdered components of modernity, with the following most closely interrelated: (1) activism, (2) low intergration with relatives, (3) preference for urban life, (4) individualism, (5) low urban sub-community stratification, (6) mass-media participation and

(7) rigid stratification of life chances.

Although the Inkeles (1966) and Kahl (1968) studies are somewhat supportive of each other, Horowitz (1972) contends that a thorough comparison is difficult because of differential definitions (1972:382). A fair amount of criticism has been generated toward attitudinal studies as a type of research approach. Nisbit (1976) points to the ethnocentricity of such a perspective. And Horowitz (1972) charges that the choice of the word "modern" in this context is a poor one, since all persons discussed are contemporaries. Modernism and traditionalism, says Horowitz (1972: 381), may coexist in the same person, whatever the level of development of his society. Both signify approaches to the future and not approaches to real structural parameters.

Further, it is thought that problematic gaps exist with regard to consistency and sequence in attitudinal research.

> Modernization of attitudes denotes a growth of consciousness. There is movement from one position to another in time; from "traditional to modern". Because modernization is multidimensional, there are also problems of consistency among the different components of the concept and problems of sequence. When attitudes are described as characteristics of traditional and modern societies, a progressive transformation in the attitudes is assumed (Horowitz, 1972:383-384).

One attitudinal area which has customarily been part of the modernity concept is that of sex role orientations. Inkeles (1976), for one, specifies women's rights, kinship obligations and attitudes concerning family size and family planning as dependent variables in the study of individual

modernity. Kahl (1968) included attitudinal items dealing with husband-wife egalitarianism. The validity of such inclusions will be discussed later. To some extent, the present study should provide a critique of sex role orientations in indidvdual modernity research. However, at this point, the theoretical basis for the inclusion of sex role orientations requires examination.

Modernization, the Family, and Sex Role Orientations

Of the various societal institutions which are affected by the processes of modernization, the family has been considered the most important. This results from the general consensus among social scientists concerning the fundamental importance of the family and its functions. Brameld (1959: 39) calls the family the most universal of cultural institutions, and, in effect, the core of culture. From the family, he maintains, radiate other institutions of widening scope.

In discussing sex role orientations in the context of modernization, it is important to review what researchers consider the influences of modernization on the family, on the one hand, as well as those of the family on modernization, on the other.

The family within a modernizing society is confronted by many factors unknown in the past. Yet it is not only factors external to the family that usher in change; the very structural composition of the family may encourage change. Since the family is a complex whole made of inter-

related parts, a change in any one area brings about change in others (Nimkoff, 1957:306).

Aside from specific external or internal factors affecting the family, there are widely held general belief systems within a society that guide actions and attitudes and are the bases on which the family functions. The origins of such belief systems differ and, many times, are impossible to determine with certainty. In some cases the belief systems arise as adjustments to physical or psychological factors (Nimkoff, 1957:311).

Of the various influences upon the family in a modernizing world, technology is assumed to be felt most profoundly (Nimkoff, 1957; Goode, 1963a, 1963b; Lenski and Lenski, 1978; Foster, 1962).

"Wherever the economic system expands through industrialization, family patterns change" (Goode, 1963b:6). Yet Goode (1963b) goes on to state that exactly how industrialization and accompanying phenomena affect the family system or how the family system encourages or discourages these processes is not clear (1963b:18). Despite the problems of causality with rgard to modernization and changes in the family, some general charateristics have been observed.

Goode (1963a) posits a strong relationship between industrializing societies and the emergence within these societies of the conjugal family type. There is much evidence to suggest that there exists a good "fit" between the

two. By this the author means that the demands of industrialization are more easily met by the conjugal family type than other more traditional types. The discussion by Moore (1974) which follows serves to illustrate Goode's (1963a) contentions.

Moore (1974) points to what are called "invariant implications for social structure" that result from modernization, industrialization, and urbanization. The list is long, and many of the consequences mentioned are closely related. But among the various phenomena, the following are of most direct relevance to the study of sex role orientations. Extensive geographical and social mobility have negative effects on traditional extended kinship systems. Accompanying these phenomena is tremendous family disorganization of a permanent type (1974:107). Parent-child relationships become affected as an ideology of individualism develops; mate selection becomes a more personal choice, and, as a result, kinship bonds are either weakened or cease to exist. As parents leave the home for geographically separate work places, other society members or insitiutions take responsibility for the children's socialization, perhaps instilling knowledge, skills, or values that the parents do not share (Moore, 1974:108).

As the family changes in response to the intrusion of technology, the roles of all its members are affected. Perhaps most significant among these is the changing social

position of women. Industrialization encourages regard for the individual based upon achievement rather than ascription; hence, rewards are given on the basis of performance rather than quality (Parsons, 1964:533). Within industrial society, one need supercedes others--the demand for skill wherever it may be found (Goode, 1963b:21). This affords women a new status, as they come to be viewed as potential contributors to the work force outside the home. Women benefit from increased employment opportunities, increasing economic independence, and greater freedom of movement and of time-dispositions (Moore, 1974:108).

Yet it is not only in the industrial work situation that the woman's new status is realized. Moore (1974) points to the husband's absence from the home in industrialized societies as the impetus for new responsibilities on the part of the wife. She is placed in charge of the supervision of the children and, perhaps more significantly, in charge of the disposition of the family's income. The latter is important in that the family is the basic consumption unit in modern economies and is the source of important economic decisions (1974:108).

A review of the modernization literature with respect to sex role orientations suggests a move toward a more egalitarian ideology in modern industrialized and industrializing societies. Nimkoff (1957:311) sees the sexes as more nearly equal, socially speaking, in contemporary industrial

society than in less technologically advanced societies. The reason for this appears to be the fact that industrial society provides identical work for both sexes and allows women to obtain employment apart from their families without the assistance of their families.

Goode (1963b) also perceives what he calls an increase in "equalitarianism" in those societies moving toward the Western, industrial type of social system. This rise in the status of women is due, he maintains, to an ideological variable. It was not merely the physical labor involved which determined the division of labor. Women could have performed "men's work" from the beginning; but it was not, says Goode (1963b:56), until the gradual, logical philosophical extension to women of originally Protestant notions about the rights and responsibilities of the individual undermined the traditional idea of women's proper place that the social status of women changed.

When Hauser (1963:211) discusses the ideology which apparently accompanies industrialization, he suggests an interesting problem. It is debatable whether the Western values typically identified with urbanism as a way of life are antecedents of or consequences of industrialization and urbanization. The possibility exists that these values are only consonant with urban living. Similarly, it is difficult to state unequivocally that modernization results in egalitarianism or vice versa. Instead, it is necessary to

pursue the subject in the context of a cultural unit which has experienced tremendous social change of all types.

Puerto Rico

Puerto Rico came under the control of the United States as a result of conditions specified in the Treaty of Paris following the Spanish American War. This presented a new challenge for the United States, a country having had no previous experience governing territories geographically separated from the mainland and culturally different from itself (United States-Puerto Rico Commission on the Status of Puerto Rico, 1966:33).

From the beginning, the United States government made concerted efforts toward the "Americanization" of Puerto Rico. Theodore Roosevelt, Jr., insular gavernor from 1929 until 1931, explicitly reviewed the United States policy with regard to Puerto Rico in his volume, Colonial Policies of the United States, written in 1937. Many Puerto Ricans, he said, misunderstood the American intent at the time:

> Their first disappointment was the Organic Act which preempted practically all the government powers to presidential appointees who were Americans. Their next was the resolute attempt to stamp out local customs and culture and to substitute English for Spanish (Roosevelt, 1974:167).

Those institutional areas considered the most important targets for Americanization were the educational system and the economy. Both are vital institutions within any society; however, no institution on the island went unaffected by the United States colonial policies.

Implementation of educational policies raised a literacy rate of 25% in 1900 to 89% in 1975. Education facilities were greatly enlarged, and class instruction became increasingly more available to all socioeconomic groups (Wagenheim, 1975:213). A debate concerning what some critics consider the arbitrary, colonialist approach to education has continued until the present. The policy which until 1948 required the use of Enlish as the language of instruction is said to have produced illiterates in two languages (Silén, 1973:96; United States-Puerto Rico, 1966:145). Another criticism voiced toward educational administrators is the cultural imperialism that found its vehicle in the school system (Wells, 1969:87). This encouraged, it is said, a psychological dependence on the United States through indigenous groups who came to support cultural and political assimilation with the United States (Morley, 1974:216).

The Puerto Rican economy perhaps felt the United States influence even more drastically. The economy has gone from one dedicated to the monocultivation of sugar cane (1898-1940) to one geared to promoting medium and light industry imported from the United States through tax exemptions (1940-1959), and, finally, to the establishment in Puerto Rico of large petrochemical companies (Maldonado-Denis, 1974:305). The catalyst for economic development was "Operation Bootstrap", a program of planned industrialization begun in Puerto Rico in the mid-forties. While this pro-

ject brought astounding fiscal development for two decades, it also provided a tremendous jolt to existing Puerto Rican society (Lewis, 1963:167; Wagenheim, 1975:105; Fitzpatrick, 1971:48). Industrialization of the island ushered in social change at all levels.

Puerto Rico, then, is a culturally distinct political unit governed by the United States. Subjected to the vast pressures of modernization, Puerto Rico has experienced social, economic, and cultural change at an extremely rapid rate. One area which has been influenced by the complex process of modernization is that of individual sex roles. Traditional role differentiation between men and women based on Hispanic ideals and the needs of a rural agrarian environment have been met head on by those sex roles characteristic of a modern urban, industrialized, Western society.

Attitudes as indicators of individual modernity have been used extensively in previous research efforts (Inkeles, 1976; Kahl, 1968; Schnaiberg, 1970; Armer, 1970). Within this context, then, the specific research problem has several dimensions. What are the elements of Puerto Rican social attitudes toward sex roles? What background and experiential characteristics are associated with differences in sex role orientations? Are the sources of sex role orientations similar for men and women in this society?

Correlates of Modern Sex Role Orientations

Literature concerning modernization and changing sex

role orientations suggests a shift toward more equal status between men and women (Goode, 1963a; Carrillo-Berón, 1976). Factors both external and internal to the family, along with changing ideologies within a society, are intimately associated with changes in the status and roles of family members. To state unequivocally that X (modernization) causes Y (change in sex role orientations) is unwarranted at this point in the development of modernization theory. However, it is possible in this case to examine socio-economic and experiential characteristics of a segment of a population which has experienced a tremendous degree of modernization and to attempt to understand their relationships to general sex role orientations.

The following correlates of sex role orientations were identified in the literature. Appropriate hypotheses stating the anticipated relationships between these correlates and sex role orientations are presented. Correlates considered here are of two general types: parental and personal characteristics. The former include: residence, educational levels, family income, father's occupational status, and mother's employment status. The latter include: residence, sex, college classification, high school type and size of graduating class, desired family size, attitudes toward sex education and pre-marital sex, and pre-marital sexual experience.

Parental Characteristics

Residence

One of the masterprocesses of modernization is that of urbanization. The influences for change brought to bear on the family within the setting of an urban, and especially a metropolitan, area are tremendous. Several characteristics of cities are seen as causes of change in the family. First, the separation of the work place from the home diminishes its educational, religious and protective functions. Other influential factors include the population density and the exposure to new ideas, both highly characteristic of urban areas (Hauser, 1963:199-214). Nimkoff 1957) discusses the circumstances under which the urban family finds itself. Because the city is more hospitable to new ideas, it is:

> ....the locus of more innovations affecting family life. An illustration concerns the idea that woman's place is in the home, an old idea derived from agricultural times when the work of women was, if not exclusively in the home, then close by the home. The city is more hospitable than the open country to the idea of women working away from home. This is not just because there are more jobs for married women away from home in the city. There is more freedom in the city because of the demand of the population and the resulting anonymity. There are also more divergent ideas in the city, which is the crossroads of many viewpoints. This helps to make urbanites generally more liberal, farmers more conservative, in the same society (1957: 313).

The urbanization of Puerto Rico began as a result of its becoming economically dependent upon the United States. Small towns within the island grew tremendously during the

1950 s as a response to developing trade, industry and improved transportation (Steward, 1969:63). While a large portion of the island is considered urban today, a rural sector coexists. The population of the rural areas, while enjoying many of the conveniences of more urbanized areas, experiences a way of life quite different from that of the city. A different mentality is said to be found in these rural residents (Muñoz-Hernández, 1972; Steward, 1969).

Writers have pointed to the importance of the family to Puerto Ricans. Accepting this as true, it is reasonable to assume that the family's values are ideally passed on to the children. Cooper's (1972) analysis of Puerto Rican youth in metropolitan areas of the northeastern United States points to the efforts on the part of the Puerto Rican parents to instill in their children the traditional rural values of the island. Based upon this information, the following hypotheses may be stated:

I. The urban residential experience of the individual's father is positively related to more modern sex role orientations within the individual.

II. The urban residential experience of the individual's mother is positively related to more modern sex role orientations within the individual.

Education

Results from Inkeles (1966) research in several countries have shown education to be the strongest predictor of individual modernity. This same contention has been made by

other social scientists (Kahl, 1968; Armer and Youtz, 1971). A high educational level suggests a broader outlook with regard to life alternatives and role expectations.

Goode (1963b:58-59) maintains that the less educated strata of most societies hold less favorable attitudes toward equality of the sexes than do other more highly educated strata. Liebman (1970:65) contends that the more educated the woman, the more likely she is to deviate from the traditional status and role given her by society. Education, he maintains, is both a liberating and egalitarianizing experience. This same contention was proposed previously in a five-country study by Almond and Verba (1963:329).

Scheele (1969) reported that despite the high degree of emancipation given upper class Puerto Rican women due to educational and occupational opportunities introduced in the late 1940s, women were still expected to conform to the cultural Hispanic ideals of a "good" wife (1969:441). Lewis (1963) foresaw education, along with other aspects of the "Americanization" of Puerto Rico, as a catalyst for more egalitiarianism in all classes within Puerto Rican society. These sources suggest the following hypotheses:

III. The educational attainment of an individual's father is positively related to modern sex role orientations within the individual.

IV. The educational attainment of an individual's mother is positively related to mdern sex role orientations within the individual.

Family Income

The relationship between income and education is usually assumed to be a positive one. Those families with higher incomes have access to a wider range of intellectual and social stimuli which would supposedly broaden the attitudes both of themselves and of their children. Scheele (1969) reported that higher incomes and resulting higher educations among Puerto Ricans contributed to a shift to a less traditional and more "American" perspective on life. It may be assumed that these modern perspectives would be most evident in higher income groups.

V. Family income is positively related to modern sex role orientations exhibited by children.

Father's Occupational Status

Whereas income alone may be an inadequate indicator of social class and its accompanying mentality, the status dimension of an occupation takes into consideration the occupation itself, as well as the educational prerequisites and the associated income. Occupational status provides yet another dimension to the socio-economic, income and educational literature. The following hypothesis is stated:

VI. The occupational status of the father is positively related to the modern sex role orientations of the children.

Mother's Employment Status

The employment of a wife and mother ouside the home should be indicative of two conditions: first, financial

needs which draw th woman from her traditional place of work, the home, and, second, a more liberal attitude toward a "woman's place". Women with more liberal attitudes toward their own potentials in the work force would be more likely to see outside employment as a satisfying alternative to housekeeping and to convey this attitude to her children.

In a study of the labor market in Puerto Rico, it was found that new factory employment opportunities were responsible for drawing women into the active labor force. Initially, this was viewed with suspicion by husbands and by conservative groups; the most threatening aspect was the decline of the customary role of husbands and other male family members. However, many of the Puerto Rican women viewed with favor the opportunity to join the work force. Most women sampled exhibited the desire to continue working outside the hove.

> In contrast to the restricted social opportunities available to most women who remain at home, the factory provides a social experience of great value, which reinforces the pull of an augmented income.
>
> Indeed, this social experience has sometimes been valued so highly that women have preferred to work even though their personal monetary gains have been small...Finally, women have gained a new feeling of independence, which, for some, has been important (Gregory, 1960:152).

The proportion of women in the Puerto Rican labor force has risen from 9.9 percent in 1899 to 22 percent in 1970; this is roughly equivalent to the proportion of mainland women who work outside the home (Picó de Hernández, 1975:

147-148). The employment situation for women has improved in recent times, but female workers continue to predominate in the textile industry, the lowest paying industrial labor. Women constitute a very small proportion of persons employed in professional occupations (Maldonado, 1974).

Despite the lack of employment opportunities for women in Puerto Rico (and perhaps because of it), it is expected that those women who participate or have participated in the labor force would relay to their children a broader range of sex role expectations. For this reason, the following hypothesis is stated:

> VII. Persons whose mothers have employment experience outside the home exhibit more modern sex role orientations than do those whose mothers have no employment experience.

Personal Characteristics

Sex

The literature cited dealing with traditional sex roles points to the repressive nature of expectations for the female in Puerto Rican society, regardless of social class. The Puerto Rican male sees the female as an inferior being. A fight for the emancipation of the "puertorriqueñas" has been suffocated, Silén (1973:164) maintains, both by religion and the morality professed in the mass media. Although the industrialization of Puerto Rico has discredited the belief that the home is the woman's place, this creates merely the illusion of female liberation. Women will become integrated into the economic and political struggles of Puerto Rico only

after they become economically independent of the culture's dominant male authority (Silén, 1973:166). Divorce, he continues, may be interpreted as one of the few arms of defense that the Puerto Rican woman has against male dominance.

Support for the women's movement has been voiced by Puerto Rican women, yet the importance of the family has caused them to qualify their position. They will not separate themselves from their cultural heritage or be alienated from their men (Hart, 1977:11; Maldonado, 1977).

Women may well be the group most affected in terms of the modernization processes of Puerto Rico. Industrialization has brought them out of the home and into the work force. Educational opportunities have widened both their aspirations and expectations. Confronted with increasing levels of freedom, the Puerto Rican woman has most probably changed her opinion of herself and her place in society. For this reason, the following hypothesis may be stated:

VIII. Females exhibit more modern sex role orientations than do males.

College Classification

College or university exposure is viewed as a liberalizing experience which is often associated with individual modernity (Inkeles, 1976). As students adjust to a new intellectual environment, they are forced to review and evaluate unique approaches to life. The college setting is one which introduces and fosters the adoption of more liberal, or at least differential, social and ideological perspectives.

The influence of the home environment and its values may diminish as the individual is presented with the increased freedom associated with college life. The longer the student is exposed to the college environment, the more opportunity there is to adopt new ideas and to identify with modernity. Lipset (1964:42-43) found that living at home while attending college prolonged the authority of the family over the student and tended to isolate him or her from university influences.

The preceeding leads to the statement of the following hypothesis:

IX. As exposure to the college environment increases, the more likely the student is to exhibit modern sex role orientations.

Residence

The aforementioned information concerning residential experience and sex role orientations is applicable in the case of the respondents themselves. On that basis, the following hypotheses is stated:

X. The individual's urban residential experience is positively related to more modern sex role orientations.

High School Type

It is assumed that a student's experience in high school influences his or her late adolescent socialization, especially in the area of sex role orientations. The type of high school, i.e., public or private, indicates both the curricular range and the ideological atmosphere of such an institution. It is assumed that private high schools would empha-

size excellerated scholarship and a broad and/or religious curriculum, and, therefore, more conservative orientations than public schools. The atmosphere would be markedly different from that of a public school, especially in the breath of contact with members of other social classes and of the opposite sex.

Assuming that this is the case, the following hypothesis is stated:

XI. Persons educated in public high schools exhibit more modern sex role orientations than those educated in private high schools.

Size of Graduating Class

Aside from the type of high school attended, the size of the graduating class serves as an indication of the interchange of ideas and the range of cultural and social influences with which the student would come into contact. To some extent, this, too, might be a function of residence. Schools with larger enrollments, in the case of Puerto Rico, would be found only in more urban areas, in which case the students would be subject to the many forms of urban life missing from a more rural area.

Assuming the accuracy of this contention, the following hypothesis may be stated:

XII. The size of the high school attended is positively related to more modern sex role orientations.

Desired Level of Education

Based on the information cited previously with regard

to educational attainment and sex role orientations, the following hypothesis is stated:

XIII. The individual's desire for higher educational attainment is positively related to modern sex role orientations.

Desired Family Size

Research in the past concerning the ideal family size among Puerto Ricans suggests a number of reasons why many children are desirable. They serve as symbols of the male's virility and are seen as verification of the wife's feminity. Aside from this, their other functions include financial and emotional support for the parents in their old age. This value is strongly supported by the belief that children are "gifts from God", which adds a religious aspect to the general ideal of the large family.

Despite these attitudes related to the number of children desired, statistics indicate that various means of contraception have received wide acceptance in Puerto Rico during the past two decades. The incidence of female sterilization by means of tubal ligation is higher, proportionally speaking, in Puerto Rico than in any other part of the world (Goode, 1969). In 1968, 34 percent of all Puerto Rican women of childbearing age were sterilized (Vásquez Calzada, 1973).

While large families are an ideal in Puerto Rico, economic realities, along with the increasing availability of birth control methods, appear to have widened the gap between the ideal and real and to have made this attitude

obsolete in the modernized society. The degree to which women's awareness of occupational alternatives outside the home has influenced this is unknown. Nevertheless, it is reasonable to assume that this represents one element of change regarding the female's roles. Based upon this and previous information reported here, the following hypothsis is stated:

XIV. The number of children desired by an individual is negatively related to more modern sex role orientations.

Desirability of Sex Education in the School

Lewis (1963), along with a multitude of social scientists, has pointed to the lack of sex information provided the Puerto Rican Female. While male sexuality has been emphasized, even exalted, the female's sexuality and her interest in the sexual aspect of life have been blatantly discouraged.

By the early 1970s, the need for sex education brought about debates concerning legislation which would make the teaching of sex education courses mandatory in the public school system of Puerto Rico. As a result, social science researchers at the University of Puerto Rico sampled attitudes toward sex education. While 85.9 percent of the adults interviewed saw sex education as a necessity, 72.8 percent voiced opposition to such instruction in the public schools. The home, they insisted, was the place where children should receive such information (Rivero, 1975:190).

Individuals with more liberal sex role orientations

should be more hospitable to the early dissemination of information concerning sex so that the child might develop a healthy attitude toward that aspect of human existence. Based on this reasoning, the following hypothesis may be stated:

XV. Persons with favorable attitudes toward sex education in the schools exhibit more modern sex role orientations than do those with negative attitudes.

XVI. The school grade in which an individual deems sex education appropriate is negatively related to more modern sex role orientations.

Pre-marital Sexual Relations:
Attitude and Experience

Much of the literature regarding Puerto Rico has focused upon differential expectations concerning male and female sexuality. What have been called twin complexes, the cult of virginity and that of the machismo, are rather contradictory approaches to human sexuality.

Machismo demands that a male prove himself sexually with numerous women both before and after marriage. At the same time, women have been taught that sex is a duty of marriage. The degree to which women have been encouraged to disavow their sexuality is evident in remarks made by women suggesting that the enjoyment of sexual intercourse by the female is sick or abnormal (Wolfe, 1969; Seda Bonilla, 1973). Female virginity has been customarily obligatory; for that reason, an occasional husband might return his bride to her father if her virginity were suspect on their wedding night (Lewis, 1963:265). One writer contends that virginity/machis-

mo ideologies have constructed a rigid wall of psychological separation between the sexes that exists at all stages of life (Lewis, 1963:265).

While it is believed that change toward less restrictive dating patterns has occurred in Puerto Rico, it appears that cleavages to this type of mentality persist. A survey of Puerto Rican high school and college students in 1972 showed that 55 percent of the males preferred that their sisters date only if they are chaperoned. Of this same group of respondents, 60.7 percent of the males said they would not marry a non-virgin (Rivero, 1972:101,105).

The prevalence of the cultural ideal of the sexually experienced male and inexperienced female is exhibited in attitudes observed by Rivero (1972). Traditionally, the young Puerto Rican woman has married her first boyfriend. Rivero (1972) indicates that although this is not strictly adhered to nowadays, there is a tendency among girls to minimize the number of past boyfriends. Of the 600 girls and 640 boys surveyed, 72.3 percent of the girls said they had had only one boyfriend, while 83 percent of the males said they had had four or more girlfriends. Whereas girls emphasized their lack of intimate contacts with boys, the male respondents, apparently motivated by the machismo ideal, emphasized a wide range of romantic experiences (1972:104). These findings suggest that a high degree of conservatism regarding female sexuality remains among young Puerto Ricans.

Based upon this and information given previously, the following hypotheses may be stated:

XVII. Persons with positive attitudes toward pre-marital sexual experience exhibit more modern sex role orientations than do those with negative attitudes.

XVIII. Persons who have experienced pre-marital sexual relations exhibit more modern sex role orientations than do those who have not.

Combined Effects

While examining the individual effects of the preceeding independent variables on the dependent variable specifies separate correlations of modern sex role orientations, an evaluation of all the variables considered jointly is in order. In this way, the aggregate amounts of variance explained may be observed. This leads to the following hypothesis:

XIX: Parental and personal characteristics together predict sex role orientations.

Source and Collection of Data

Data were obtained by means of a self-administered questionnaire presented in class to all students enrolled in the College of Agriculture and the Department of Home Economics at the University of Puerto Rico. Conceptual areas tapped included personal background, parental information, high school and college experience, work experience, and life goals. An addendum consisting of traditional Hispanic sex role orientation items and open-ended questions related to

family structure was also employed among the Puerto Rican population. All questionnaire items were translated into Spanish by a group of bilinguals and presented in a 7"x10" booklet for ease of completion.

Response rates were 25% within the College of Agriculture and 50% within the Department of Home Economics.

Measurement

Dependent Variable

Sex Role Orientation

A set of 15 attitudinal items was developed to measure existing sex role orientations among Puerto Rican college students. These items dealt with a variety of role expectations and family structure considerations relating to sex differentiation within the culture.

The sex role orientation items based on literature concerning Puerto Rico included the following:

(1) When a person marries, it's important that the girl be a virgin.

(2) The person I marry must be sexually stimulating for me.

(3) One shouldn't marry without the consent of his/her parents.

(4) If the wife and husband are unhappy in the marriage, it's better that they divorce.

(5) In financial matters, it's the husband who should make the decisions.

(6) Parents should permit their daughters to go out alone with their boyfriends.

(7) Children are the principal purpose of sexual relations.

(8) In all family matters, the wife should be consulted by the husband before making a decision.

(9) A woman shouldn't marry until she has learned to perform household duties.

(10) I believe in family planning by means of modern contraceptive techniques.

(11) So that a couple will be happier, it's important that they have a child during the first year of marriage.

(12) Because of the population explosion, nowadays a couple shouldn't have more than two children.

(13) In the past, the family played a more important role than today.

(14) Industrialization has produced changes in family structure.

(15) The fact that the wife works outside the home causes the man to feel less "macho" than before (loss of masculinity).

Response patterns for each item were of the Likert type with strongly disagree items assigned a score of 1 and strongly agree a score of 5 with a score of 3 representing neutral or undecided. Items were reverse coded where appropriate to associate a high score with sex role modernity and a low score with sex role traditionalism. Table 1 shows the adjusted percentage frequencies of responses by the Likert scale score for each item.

Factor analysis was employed in order to determine homogeneity within the data. This technique presents the minimum number of constructs or factors necessary to account for the interrelations among a group of variables (Brown, 1970: 79). In this case, the PA1 factoring method was used with

TABLE 1

ADJUSTED FREQUENCIES (PERCENTAGES) FOR SEX ROLE ORIENTATION ITEMS AMONG AGRICULTURE AND HOME ECONOMICS STUDENTS, COMBINED (N = 507)

Sex Role Attitudinal Items	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree	Actual N of Missing Cases	Mean*/	Standard Deviation*/
When a person marries, it's important that the girl be a virgin.	15.6	22.4	12.4	31.3	18.4	6	2.85	1.38
The person I marry must be sexually stimulating for me.	38.8	47.0	6.3	6.1	1.8	15	1.87	.92
One shouldn't marry without the consent of his/her parents.	6.0	19.5	14.9	43.4	16.1	3	2.54	1.15
If the wife and husband are unhappy in the marriage, it's better that they divorce.	23.6	29.5	23.6	17.8	5.6	6	2.50	1.18
In financial matters, it's the husband who should make the decisions.	5.8	13.3	9.2	47.2	24.5	5	2.29	1.15
Parents should permit their daughters to go out alone with their boyfriends.	17.9	45.6	16.5	14.7	5.2	5	2.43	1.10
Children are the principal purpose of sexual relations.	5.2	11.4	11.8	44.6	26.9	9	2.22	1.11
In all family matters the wife should be consulted by the husband before making a decision.	55.8	32.0	3.2	6.2	2.8	7	1.67	.99
A woman shouldn't marry until she has learned to perform household duties.	21.8	40.3	9.4	23.0	5.6	6	3.48	1.22
I believe in family planning by means of modern contraceptive techniques.	33.4	38.0	12.0	9.4	7.2	7	2.19	1.19
So that a couple be happier, it's important that they have a child during the first year of marriage.	2.2	4.0	10.2	47.6	36.0	7	1.88	.89
Because of the population explosion, nowadays a couple shouldn't have more than two children.	21.9	34.3	15.5	21.5	6.8	9	2.57	1.23
In the past, the family played a more important role than today.	27.8	35.9	9.7	17.9	8.7	11	3.59	1.27
Industrialization has produced changes in family structure.	50.3	43.3	4.2	1.0	1.2	10	4.40	.72
The fact that the wife works outside the home causes the man to feel less "macho" than before. (loss of masculinity)	9.8	16.3	12.0	35.9	25.9	9	2.54	1.29

*/ These figures are based upon 455 cases due to missing cases omitted from the factor analysis.

a varimax orthogonal rotation. From the 15 attitudinal items, factors were identified which would sufficiently isolate various dimensions represented among the attitudes presented.

The Agriculture and Home Economics data were combined and treated as a single population, Table 2. Appropriate recoding allowed for comparability among the items. Factor analysis revealed five factors within the 15 attitudinal items which theoretically appeared to be indicators of sex role orientations. Six attitudinal items with loadings above .44 were isolated in factor1. These six items revealed an alpha reliablility coefficient of .64. Missing cases for the combined Agriculture and Home Economics data constituted 10.2 percent of the total cases.

Given the special interest in differential sex role orientation found in males and females, facotr analysis was performed for each sub-group as a partial test of factor reliability, Tables 3 and 4. The results were highly similar. Six factors were evident in the male data and six factors in the female data. Five attitudinal items from factor 1 of the male data had loadings of .40 or above. Four items from the female data exhibited loadings of .58 or above; three of these items were common to factors 1 of both the separate male data and the combined Agriculture and Home Economics data. Items within the separately analyzed male and female data demonstrated alpha reliability coefficients of .64 and .60, respectively; both were considered acceptable. Missing

TABLE 2

FACTOR LOADINGS FOR SEX ROLE ORIENTATION ITEMS IN TOTAL SAMPLE

Sex Role Attitudinal Items	FACTORS 1	2	3	4	5
When a person marries, it's important that the girl be a virgin.	.67	—	—	—	—
The person I marry must be sexually stimulating for me.	—	—	—	.68	—
One shouldn't marry without the consent of his/her parents.	.59	—	—	—	—
If the wife and husband are unhappy in the marriage, it's better that they divorce.	—	—	.61	—	—
In financial matters, it's the husband who should make the decisions.	.60	—	—	—	—
Parents should permit their daughters to go out alone with their boyfriends.	—	—	.62	—	—
Children are the principal purpose of sexual relations.	.60	—	—	—	—
In all family matters the wife should be consulted by the husband before making a decision.	—	—	—	.70	—
A woman shouldn't marry until she has learned to perform household duties.	.44	—	—	—	—
I believe in family planning by means of modern contraceptive techniques.	—	—	.69	—	—
So that a couple be happier, it's important that they have a child during the first year of marriage.	.58	—	—	—	—
Because of the population explosion, nowadays a couple shouldn't have more than two children.	—	—	—	—	.52
In the past, the family played a more important role than today.	—	.73	—	—	—
Industrialization has produced changes in family structure.	—	.74	—	—	—
The fact that the wife works outside the home causes the man to feel less "macho" than before. (loss of masculinity)	—	.39	—	—	.65
Eigenvalue	2.46	1.83	1.28	1.14	1.03
Percent of variance	16.40	12.30	8.50	7.70	6.90
Cumulative percent	16.40	28.70	37.20	44.90	51.80

TABLE 3

FACTOR LOADINGS FOR SEX ROLE ORIENTATION ITEMS AMONG MALE RESPONDENTS

Sex Role Attitudinal Items	FACTORS 1	2	3	4	5	6
When a person marries, it's important that the girl be a virgin.	.77	--	--	--	--	--
The person I marry must be sexually stimulating for me.	--	--	--	--	--	--
One shouldn't marry without the consent of his/her parents.	.42	--	--	.46	--	--
If the wife and husband are unhappy in the marriage, it's better that they divorce.	--	--	.72	--	--	--
In financial matters, it's the husband who should make the decisions.	.73	--	--	--	--	--
Parents should permit their daughters to go out alone with their boyfriends.	--	--	--	--	--	--
Children are the principal purpose of sexual relations.	--	--	--	.69	--	--
In all family matters the wife should be consulted by the husband before making a decision.	--	--	--	--	.90	--
A woman shouldn't marry until she has learned to perform household duties.	.40	--	--	--	--	--
I believe in family planning by means of modern contraceptive techniques.	--	--	.52	--	--	--
So that a couple be happier, it's important that they have a child during the first year of marriage.	.54	--	--	--	--	--
Because of the population explosion, nowadays a couple shouldn't have more than two children.	--	--	--	--	--	.79
In the past, the family played a more important role than today.	--	.72	--	--	--	--
Industrialization has produced changes in family structure.	--	.84	--	--	--	--
The fact that the wife works outside the home causes the man to feel less "macho" than before. (loss of masculinity)	--	--	--	.67	--	--
Eigenvalue	2.59	1.68	1.51	1.18	1.10	1.03
Percent of variance	17.30	11.20	10.10	7.90	7.40	6.90
Cumulative percent	17.30	28.50	38.60	46.50	53.90	60.80

TABLE 4

FACTOR LOADINGS FOR SEX ROLE ORIENTATION ITEMS AMONG FEMALE RESPONDENTS

Sex Role Attitudinal Items	FACTORS 1	2	3	4	5	6
When a person marries, it's important that the girl be a virgin.	.59	—	—	.40	—	—
The person I marry must be sexually stimulating for me.	—	—	.71	—	—	—
One shouldn't marry without the consent of his/her parents.	.38	—	—	—	—	—
If the wife and husband are unhappy in the marriage, it's better that they divorce.	—	—	—	.63	—	—
In financial matters, it's the husband who should make the decisions.	.65	—	—	—	—	—
Parents should permit their daughters to go out alone with their boyfriends.	—	—	—	.64	—	—
Children are the principal purpose of sexual relations.	.66	—	—	—	—	—
In all family matters the wife should be consulted by the husband before making a decision.	—	—	.75	—	—	—
A woman shouldn't marry until she has learned to perform household duties.	—	—	—	—	—	.60
I believe in family planning by means of modern contraceptive techniques.	—	—	—	.45	.61	—
So that a couple be happier, it's important that they have a child during the first year of marriage.	—	—	—	—	—	.69
Because of the population explosion, nowadays a couple shouldn't have more than two children.	—	—	—	—	.79	—
In the past, the family played a more important role than today.	—	.76	—	—	—	—
Industrialization has produced changes in family structure.	—	.64	—	—	—	—
The fact that the wife works outside the home causes the man to feel less "macho" than before. (loss of masculinity)	—	.62	—	—	—	.44
Eigenvalue	2.31	2.01	1.30	1.19	1.08	1.04
Percent of variance	15.40	13.50	8.70	8.00	7.20	7.00
Cumulative percent	15.40	28.90	37.60	45.50	52.80	59.80

values accounted for 8 percent of the male and 11 percent of the female data.

A sex role orientation scale was developed using the six high loading attitudinal items from the first factor found in the combined data. Likert scale values ranging from 1 to 5 and corresponding to the underlying traditional versus modern sex role orientation continuum were used to compute a single sex role orientation scale score. Scale scores were computed for each respondent by adding the values recorded on the six items with high factor loadings. Scale scores had a possible range of 6 through 30.

Independent Variables

The independent variables are considered to be of two types. First, several variables deal exclusively with parental characteristics. They include: father's and mother's residential experiences, father's and mother's educational attainment, family income, father's occupational status, and mother's employment status.

Second, the remainder of the independent variables are considered strictly characteristic of the individual respondents and were either experiential or attitudinal in nature. They include: respondent's sex, college classification, residential experience, type of high school attended, size of graduating high school class, desired level of education, desired family size, attitude toward the desirability of sex

education in the school, school grade deemed appropriate for sex education to begin, attitude toward the desirability of pre-marital sexual relations, and actual pre-marital sexual relations.

Analysis of Data

In order to test the hypothesis previously stated, the following analytical methods were used: t-test, Pearson's correlation, and multiple regression. A description of these methods follows.

t-test

The t-test is a statistical method for testing the significance of the difference between two sample means. The t-test is specifically for determining equality/inequality of means (Nie, et al., 1975:267). Female and male students were treated as two independent samples and a test of mean differences was performed for the sex role orientation scale scores and for selected dichotomized independent variables.

Pearson's Correlation

Pearson's correlation coefficient r was used to measure the strength of relationship between the two interval-level variables; this strength of relationship indicates both the goodness of fit of a linear regression line to the data and, when r is squared, the proportion of variance in one variable explained by the other (Nie, et al., 1975:280). In this case, the relationships between the dependent variable, the sex role orientation scale scores, and the independent variables

were analyzed.

Multiple Regression

Multiple regression is a general statistical technique for analyzing the collective and separate contributions of two or more independent variables to the variation of a dependent variable (Kerlinger, 1973:3). For purposes here, multiple regression was used to determine the amount of variation in the sex role orientation scale scores that could be accounted for by the independent variables or their combinations. The F-ratio was employed to test the over-all contribution of the independent variables in explaining the dependent variable as indicated by the total variance (Keringer, 1973:63). In addition, R-ratios were used to test the incremental contributions of personal and parental variables in the total sample and among men and women.

Results

Zero-order correlation was used to examine the relationships between the sex role orientation scale and the independent variables (Table 5). T-test analysis was used to compare the difference in means for subgroups of the population based on appropriate dichotomies of the item responses (Table 6).

Parental Characteristics

Hypotheses I and II, related to parental residential experience, were accepted on the basis of findings reported in Table 5. More modern sex role orientations were positively

TABLE 5

ZERO-ORDER CORRELATIONS BETWEEN SEX ROLE ORIENTATION SCORES AND SELECTED BACKGROUND AND EXPERIENTIAL CHARACTERISTICS FOR TOTAL AND MALE AND FEMALE STUDENT SUBGROUPS

Characteristics	Sex Role Orientation Scores		
	Total	Males	Females
Parental Characteristics			
Father's Childhood Residence	.075*/	.131*/	.047
Mother's Childhood Residence	.084*/	.142*/	.064
Father's Educational Level	.044	.130*/	.006
Mother's Educational Level	-.031	-.002	-.023
Family Income	.068	.124	.054
Father's Occupational Status	.077*/	.203**/	.016
Mother's Employment Status	.027	-.080	.080
Personal Characteristics			
Sex	.159***/	—	--
College Classification	.170***/	.177**/	.102*/
Residence	.117**/	.141*/	.105*/
Type of High School Attended	.092*/	.172*/	.061
Size of Graduating High School Class	.018	-.042	-.024
Desired Level of Education	.084*/	.202**/	.054
Desired Family Size	-.104*/	-.121	-.069
Desirability of Sex Education in the School	-.039	-.112	-.022
School Grade Appropriate for Sex Education	-.230***/	-.299***/	-.153**/
Desirability of Pre-Marital Sexual Relations	-.179***/	-.211**/	-.275***/
Actual Pre-Marital Sexual Relations	-.113**/	-.253***/	-.153**/
	N=507 1/	N=171 1/	N=336 1/

*/ $p \leq .05$

**/ $p \leq .01$

***/ $p \leq .001$

1/ Including missing cases

correlated to urban residential experiences of the student's fathers and mothers ($r=.075$; $p \leq .05$; $r=.084$; $p \leq .05$, respectively). The correlations between parental residences and more modern sex role orientations among the male students were nearly double those for the total sample (father's residence: $r=.131$; $p \leq .05$; mothers residence: $r=.142$; $p \leq .05$). The relationships between sex role orientation and parental residences of female students were not significant.

The relationships between sex role orientation and parent's educational attainment (Hypotheses III and IV) were not significantly different from zero in either the total sample or in the subgroups. One exception was the father's educational level found among the male students. The educational attainment of male student's fathers was positively correlated with more modern sex role orientations ($r=.130$, $p \leq .05$).

These results are not consistent with previous research findings concerning the role of education in individual modernity. The lack of significant positive correlations may be explained by the levels of educational attainment exhibited by the respondent's parents. Generally, educational levels were low for the total sample. Fathers of male students exhibited the highest educational attainment, which averaged little more than a high school education. This variation in educational levels, absent in the total sample and the other subgroup , apparently accounts for the signi-

ficance of the correlation between father's educational level and more modern sex role orientations among their sons. This lends some degree of support to hypotheses III. Nevertheless, this support is insufficient for acceptance of the hypothesis.

Hypothesis V, which concerned family income and sex role orientations, was rejected on the basis of data reported in Table 5.

It is believed that this variable did not solicit accurate responses and, for this reason, the relationship exhibited between sex role orientations and income should not be considered valid. Reports from the Puerto Rican project leader and Agriculture students with whom we discussed the low income levels reported indicated that for fear of investigation of their families' financial statuses, many students underestimated their families' yearly income. The basis for such reluctance to give accurate income information appeared to be the fact that many students receive Basic Education Grants from the Federal government and they feared the loss of them should any investigation be made.

Hypothesis VI, which anticipated a positive correlation between occupational status of the father and modern sex role orientations of their children was accepted (Table 5). Father's occupational status was a positive correlate of modern sex role orientations in the total group of students ($r=.077$, $p \leq .05$). Among the males, father's occupational

status was even more highly correlated with modern sex role orientations ($r=.203$, $p \leq .01$). Among the females, father's occupational status was not correlated with sex role orientations.

Table 6 shows the t-test values of sex role orientation scores for students whose mothers have and those whose mothers have not had employment experience outside the home. The results indicate that sex role orientation scores did not differ appreciably for the two groups. Mother's employment status was not correlated with students' sex role orientation scores either in the total or the subgroups (Table 5). This hypothesis was rejected on the basis of these results.

Personal Characteristics

The hypothesis dealing with sex role orientations among the two sexes was stated as follows: Females exhibit more modern sex role orientations than do males.

The results of the t-test analysis of males and females indicate that they differed significantly in their respective sex role orientation scores (Table 6). A t-value of 3.31 with a probability of .001 was found. The mean scores for males and females were 13.91 and 15.36, respectively, indicating that females exhibited considerably more modern sex role orientations than did males.

Table 5 shows the correlation between sex and sex role orientation scores. Sex was positively correlated with modern sex role orientation scores ($r=.159$, $p \leq .001$). Based on these

TABLE 6

T-TESTS OF MEAN DIFFERENCES OF SEX ROLE ORIENTATION SCORES FOR SELECTED PARENTAL AND PERSONAL CHARACTERISTICS, TOTAL SAMPLE

Independent Variables	Sex Role Orientation Scores Mean	(S.D.)	T-Value
Mother's Employment Status			
Has Employment Experience	15.015	(4.332)	
No Employment Experience	14.769	(4.347)	
			.62
Sex			
Male	13.906	(5.072)	
Female	15.360	(3.787)	
			3.31**/
Type of High School Attended			
Private	15.433	(4.084)	
Public	14.716	(4.376)	
			1.62
Desirability of Sex Education in the Schools			
Positive	14.848	(4.261)	
Negative	13.868	(4.307)	
			.87
Desirability of Pre-Marital Sexual Relations			
Positive	16.058	(4.589)	
Negative	14.361	(3.992)	
			3.81**/
Actual Pre-Marital Sexual Relations			
Yes	15.838	(4.483)	
No	14.590	(4.186)	
			2.45*/
	N=507		

*/ $p \leq .05$

**/ $p \leq .001$

findings, the hypothesis was accepted.

Table 5 shows that college classification was a positive correlate of modern sex role orientations in the total sample ($r=.170$, $p \leq .001$). On this basis, the hypothesis was accepted. College classification was also positively correlated to sex role orientations in both the male and female subgroups ($r=.177$, $p \leq .01$; $r=.102$, $p \leq .05$, respectively); the relationship was somewhat stronger among males than females. The relationship exhibited here is consistent with findings of previous research concerning college experience and liberalization of attitudes.

Table 5 shows that urban experience of the students was a positive correlate of modern sex role orientations in the total sample ($r=.117$, $p \leq .01$). Among the male and female subgroups, urban residential experience was also a positive correlate of more modern sex role orientations ($r=.141$, $p \leq .05$; $r=.105$, $p \leq .05$, respectively). This hypothesis was accepted on the basis of these findings. Previous research has pointed to urban life as a more liberalizing influence on the individual and these results confirm such a contention. Yet urban residence encompasses many factors, and, in itself, only partially accounts for one's life perspective.

The hypothesis dealing with high school type and sex role orientations was stated as follows: Persons educated in public high schools exhibit more modern sex role orientations than do those educated in private high schools.

This hypothesis was rejected on the basis of the t-test analysis of sex role orientations among students educated in private and those educated in public high schools (Table 6). A t-value of 1.62 with a probability of .107 was demonstrated. Although no significant difference was found between mean scores for the two groups, results showed that students who attended private high schools averaged somewhat higher sex role orientation scores, indicating a more modern perspective.

Hypothesis XII, concerning size of graduating high school class and sex role orientation scores was rejected on the basis or the findings in Table 5. The size of the student's graduating high school class was not related to sex role orientation scores in either the total sample or the subgroups.

The hypothesis examining the relationship between the levels of educational attainment desired by these college students and their sex role orientation scores was accepted on the basis of the information in Table 5. The student's desired level of education was a positive correlate of modern sex role orientations ($r=.084$, $p \leq .05$). An extremely high correlation between the two was demonstrated among male students ($r=.202$, $p \leq .01$). This was not the case among the females, where desired educational level was not correlated with sex role orientation scores.

The findings in Table 5 show the number of children desired by the students to be negatively correlated with modern

sex role orientations for the total group ($r=-.104$, $p \leq .05$). On this basis the hypothesis was accepted. However, correlations between desired family size and modern sex role orientations were not significant within the male and female subgroups (Table 5). Such findings suggest a spurious relationship between number of children desired and sex role orientation scores, since results in neither subgroup support the relationship found in the total group of students.

Two aspects of sex education were focused upon in the study. The first dealt with the respondents' attitude toward the desirability of sex education in the school curriculum. The corresponding hypothesis was stated as follows: Persons with favorable attitudes toward sex education in the schools exhibit more modern sex role orientations than do those with negative attitudes.

The results of t-test analysis of sex role orientation mean scores of the group with a positive attitude toward sex education in the schools and that group with a negative attitude are given in Table 6. No significant difference between mean sex role orientation scores existed for the two groups ($t=.87$, $p \leq .398$).

The second hypothesis examining school sex education attitudes and sex role orientation concerned the school grade in which sex education was considered appropriate. Response to this item was applicable only in the case of those respondents who held positive attitudes toward sex education in

the school. This hypothesis was accepted on the basis of the findings in Table 5 indicating that the school grade appropriate for sex education was a negative correlate of modern sex role orientation scores in the total sample ($r=-.230$, $p \leq .001$) and for males and females ($r=-.299$, $p \leq .001$; $r=-.153$, $p \leq .01$, respectively). The highest correlation between the two variables was exhibited among males .

The first hypothesis relating pre-marital sexual relations and sex role orientations dealt with the individual's attitude as to the desirability of pre-marital sexual relations. Table 6 shows the t-test analysis of sex role orientation scores for respondents with positive and those with negative attitudes toward pre-marital sexual relations. A t-value of 3.81 with .000 probability was found. Students who viewed pre-marital sexual relations as a positive experience exhibited significantly higher sex role orientation scores than did the other group. Mean scores for the two groups were 16.058 and 14.361, respectively.

The zero-order correlations found in Table 5 support the contention that a negative attitude toward pre-marital sexual relations is negatively related to modern sex role orientations. This was the case in the total group and both the male and female subgroups ($r=-.230$, $p \leq .001$; $r=.-.211$, $p \leq .01$; $r=-.153$, $p \leq .01$, respectively). On the basis of these findings, the hypothesis was accepted.

The hypothesis concerning the relationship between act-

ual pre-marital sexual relations and sex role orientations was accepted on the basis of the findings in Table 6. A t-value of 2.45 with a probability of .016 was demonstrated. Those respondents with pre-marital sexual experience exhibited a mean score of 15.838, which differed significantly from the second group's mean score of 14.590.

The findings in Table 5 support the contention that lack of pre-marital sexual experience is negatively correlated with more modern sex role orientation. The total group and the male and female subgroups all exhibited signigicantly high and negative correlations ($r=-.113$, $p \leq .01$; $r=-.253$, $p \leq .001$; $r=-.153$, $p \leq .01$, respectively). This relationship was especially strong among the males.

Combined Effects

The following reports the findings for the test of the multivariate hypothesis relating sex role orientation scores to selected parental and personal socio-economic, experiential, and attitudinal characteristics. The hypothesis was stated as follows: Parental and personal characteristics together predict sex role orientations.

The data corresponding to multiple regression analysis in Table 7 provide a basis for the acceptance of this hypothesis for the total sample of students. Data in this table indicate that 19.2 percent of the variance of the sex role orientation scores in the total group of students was accounted for by a combination of the 17[1] independent variables ($R^2=.192$, $F=4.89$, $p \leq .01$). In the male subgroup, 24.3 percent of the variance within the sex role orientation scores was explained

[1]Desirability of sex education in school omitted because of the near consensus as to its desirability.

TABLE 7

SEX ROLE ORIENTATION SCALE SCORES AND SELECTED PARENTAL AND PERSONAL CHARACTERISTICS: MULTIPLE REGRESSION RESULTS

Characteristics	Sex Role Orientation Scale					
	Total		Males		Females	
	B	b/S.E.	B	b/S.E.	B	b/S.E.
Parental Characteristics						
Father's Childhood Residence	-.010	-.298/.219	-.045	-.145/.459	.005	.124/.248
Mother's Childhood Residence	.037	.105/.229	.032	.108/.517	.040	.100/.253
Father's Educational Level	.044	.764/.124	.060	.112/.259	.023	.379/.142
Mother's Educational Level	-.125	-.207/.110	-.141	-.261/.215	-.085	-.129/.129
Family Income	.065	.177/.172	.043	.126/.306	.074	.191/.214
Father's Occupational Status	-.002	-.137/.348	.077	.441/.720	-.022	-.108/.402
Mother's Employment Status	.008	.236/.139	-.094	-.399/.384	052	.118/.147
Personal Characteristics						
Sex	.240***/	2.175/.525	---	---	---	---
College Classification	.157**/	.657/.216	.024*/	.806/.334	.125	.560/.290
Residence	.035	.886/.154	-.019	-.564/.341	.096	.211/.170
Type of High School Attended	.061	.509/.567	.175	1.432/1.08	-.000	-.255/.687
Size of Graduating High School Class	.049	.986/.123	.119	.274/.272	-.006	-.121/.136
Desired Level of Education	.061	.231/.189	.100	.451/.428	.038	.128/.210
Desired Family Size	-.057	-.189/.161	.007	.219/.276	-.112	-.377/.213
School Grade Appropriate for Sex Education	-.122*/	-.201/.083	-.174	-.296/.156	-.006	-.104/.102
Desirability of Pre-Marital Sexual Relations	-.247***/	-2.380/.341	-.176	-1.721/.956	-.307***/	-3.030/.708
Actual Pre-Marital Sexual Relations	-.046	-.501/.652	-.095	-.939/.957	.308	.336/.1.052
R^2	.192		.243		.148	
Adjusted R^2	.153		.131		.088	
F-Value	4.89**/		2.17**/		2.45**/	

*/ $P \leq .05$

**/ $P \leq .01$

***/ $P \leq .001$

by the combination of parental and personal characteristics (R^2=.243, F=2.17, $p \leq .01$). The regression of these variable on sex role orientations for the female subgroup showed the overall effect of the 17 variables to be less than for the total group and male subgroup, yet still statistically significant (R^2=.148, F=2.45, $p \leq .01$).

Regression coefficients for the 17 independent variables are found in Table 7 also. In the total group of Puerto Rican students, school grade deemed appropriate for sex education and desirability of pre-marital sexual relations were negative predictors of sex role orientation scores (B= -.122, $p \leq .05$; B=-.247, $p \leq .001$). College classification was a predictor of sex role orientation scores for the total group (B=.157, $p \leq .01$). Sex of the respondents was a positive predictor of the sex role orientation score (B=.240, $p \leq .001$). None of the remaining variables exerted independent effects when all were jointly considered.

College classification was the only predictor of sex role orientation scores for the male subgroup of students (B=.204, $p \leq .05$). In the female subgroup, desirability of pre-marital sexual relations was the singular predictor of sex role orientation scores and it was found to be negative (B=-.307, $p \leq .001$).

To determine the independent effects of parental variables and personal variables, regression equations were used in which the coefficients for one set of variables were calculated

after the other set had been entered into the model. This procedure controlled for the variance explained by the variables entered first. The full and reduced regression models were compared using the following formula discussed by Kerlinger (1974):

$$F=\frac{(R^2 \text{ full}-R^2 \text{ reduced})/(k_f-k_r)}{(1-R_f^2)/(N-k_f-1)}$$

Where R^2 full is the proportion of explained variance for the full regression model, R^2 reduced represents the explained variance for the initial set of variables, N is the sample size, and k_f and k_r represent degrees of freedom for the full and reduced models. The F-ratio indicates whether the last set of variables entered in the model explains a significant proportion of the variance in the dependent variable.

Table 8 presents the results of the stagewise regression when parental variables were entered last for the total sample. The increment of explained variance in the sex role orientation scores associated with parental characteristiics was .01, which was slightly up after controls and was not statistically significant. The increment associated with the personal characteristics was .17.

The parental characteristics did not explain a significant proportion of the variance for sex role orientation scores when they were added to the equation including the personal characteristics. This was the case in the total sample and in the male and female samples. When personal

TABLE 8

INCREMENT OF EXPLAINED VARIANCE IN SEX ROLE ORIENTATION SCORES ASSOCIATED WITH PARENTAL AND PERSONAL CHARACTERISTICS, TOTAL SAMPLE, MALES AND FEMALE SUBGROUPS

Characteristics	Total	Male	Female
Parental Characteristics			
Direct	.02	.06	.03
Increment	.01	.03	.01
Personal Characteristics			
Direct	.18**/	.21**/	.14**/
Increment	.17	.18***/	.12**/
Total R^2	.192**/	.243*/	.148**/

*/ $p \leq .05$

**/ $p \leq .01$

***/ $p \leq .001$

characteristics were added to the equation already containing the parental characteristics, no significant proportion of the variance for sex role orientation scores was explained in the total sample. However, within the male group the increment of explained variance was .18 and was significant at the .001 level. Similarly, the increment of explained variance was .12 in the female sample and was found to be significant at the .01 level.

These findings indicate that personal characteristics were more influential in predicting variance than were the parental characteristics. The increment of explained variance when the personal characteristics were entered into the model last was insignificant, despite the significant increments found in the male and female subgroups.

Discussion

The findings of this study indicate that of the seventeen variables analyzed, twelve were correlated with sex role orientations exhibited by Puerto Rican students. Personal characteristics were more important contributors to sex role orientations than were parental characteristics.

The individual's attitude toward pre-marital sexual relations appeared to be the most important predictor of sex role orientation. Among the females it was an exceptionally high correlate. This supports other results which showed sex to be highly correlated with sex role orientation (Hart, 1977; Maldonado, 1977). Females exhibited significantly

higher, i.e., more modern, sex role orientation scores than did the males. Literature dealing with sex roles suggests that a more egalitarian ideology develops as societies become more modern. The economic history of Puerto Rico points to heightened acceptance by women of their potential in the work force. The female students involved in this study enjoy academic opportunities which were unheard of to their gender fifty years ago. They would be expected to exhibit considerably broader viewpoints with regard to sex role expectations.

One female student volunteered the following response to an item in the questionnaire concerning the motives of women in college:

> Nowadays marriage is not the ultimate goal of women. Changes in our society's family system over the last several decades have subordinated marriage; other interests have taken its place. For this reason, the woman has set her sights on the development of her capacities as a human being and not merely as a member of one sex.

Her position is, perhaps, hardly conventional; nevertheless, she speaks as a member of a group which has been historically repressed occupationally, educationally, economically, and sexually. This group exists in Puerto Rico, a society having experienced modernization at a tremendous pace.

College classification was also found to have a siginificant effect on sex role orientation. More experience within the university setting and the declining influence of the family appear to have a liberalizing effect on the individual. This finding supports other research in this area (Inkeles,

1976; Lipset, 1964).

School grade considered appropriate for the initiation of sex education was found to be another predictor of sex role orientation scores. The influence of this variable was consistent throughout the total group and the male and female subgroups. Such results were anticipated, given the concept of sex role modernity which the sex role orientation scale purportedly measured. A less traditional view of sexuality and sex roles would reasonably carry over into one's attitude toward the appropriateness of the dissemination of information regarding human sexuality.

Although four of the seven hypotheses considering parental characteristics were accepted, the low correlations demonstrated in all cases should be noted. Additionally, multiple regression results pointed to a lack of predictive power in the parental characteristics when considered jointly. Apparently, the modern urban atmosphere of Puerto Rico serves to diminish or negate parental influences such as childhood residence and parental education levels, often thought to be correlates of differential sex role orientations. Family income will not be discussed because of its suspected lack of reliability.

Perhaps the most notable result regarding parental characteristics is the absence of significant correlations between these variables and sex role orientation scores among the female subgroup. This would suggest a difference in social-

ization patterns for males and females within the Puerto Rican society. Such a finding calls for further investigation in this direction.

Personal characteristics, as opposed to parental ones, were found to be better predictors of sex role orientations. Attitudinal variables such as school grade deemed appropriate for sex education and desirability of pre-marital sexual relations were logical correlates of sex role orintations, since they represent a general perspective from which to view human sexuality in Puerto Rican society; they constitute a facet of the larger concept of sex role orientation.

Summary

Social scientists have focused much attention on the modernization of so-called "developing" nations. The study of individual modernity, a psychological approach to modernization directed at the individual, has generated provocative information supporting the employment of attitudinal methods of research. Individual modernity is defined as a complex of attitudes and behaviors which allows a better "fit" between the individual and the technologically modernizing environment in which he or she lives.

Sex role orientation constitues one conceptual area within the range of phenomena considered to be indicative of psychological adjustments to modernization. Previous research suggests that egalitarianism becomes the norm as societies develop technologically. The nature of modern

society is such that it broadens the scope of sex-appropriate attitudes and behavior, bringing about change in traditional ideologies and their accompanying cultural practices.

During the last century, the island of Puerto Rico has experienced a rapid transformation from an agrarian to an industrial society. It provides a context in which to examine differential sex role orientations. The shift in sex role orientations would be most noticeable among youth entering adulthood, especially among college students. For this reason, the present study focused upon sex role orientations exhibited by students enrolled in agriculture and home economics curricula at the University of Puerto Rico.

Independent variables were viewed as two types: (1) parental and (2) personal. Personal characteristics included: parents' residences for most of their lives, parent's educational attainment levels, family income, father's occupational status, and mother's employment status. Personal characteristics consisted of: the student's six, college classification, residence for most of the individual's life, type of high school attended, size of graduating high school class, desired level of educational attainment, desired family size, desirability of sex education in the schools, school grade in which sex education should begin, desirability of pre-marital sexual relations, and actual pre-marital sexual relations.

The dependent variable within this study was a sex role orientation scale based on traditionally Hispanic sex role

attitudes. The scale was developed by means of the factor analysis of Likert-type responses to a set of fifteen attitudinal items for the total sample. Factor analyses of the male and female subgroups were quite similar to that of the total sample. For the total sample, six attitudinal items with acceptable loadings were isolated in factor 1. Six factors were evident in the male data and six factors in the female data. Reliability coefficients for the items in the first factor were low but acceptable in all three groups.

Nineteen hypotheses were constructed which anticipated the relationships between the dependent and independent variables. Hypotheses were tested on the basis of results from zero-order correlations and/or t-test analysis. A final hypothesis testing the predictive power of the independent variables considered jointly was tested using multiple regression. Parental and personal characteristics were grouped and entered into the equation sequentiallly so as to demonstrate the incremental variance explained by each set of independent variables. Acceptance of the hypotheses was based on findings for the total sample; however, the aforementioned statistical procedures were applied to the male and female groups within the sample since, given the phenomenon in question, differences between these two groups were anticipated.

Of the hypotheses concerning parental characteristics and sex role orientations scores, three of seven were accepted.

They included those hypotheses dealing with residential experience of the individual's parents and father's occupational status. Children whose fathers and mothers had more urban residential experience exhibited higher, i.e., more modern, sex role orientation scores. Likewise, as father's occupational scores increased, so did sex role orientation scores for their children.

Among the hypotheses based on personal characteristics, eight of the eleven hypotheses were accepted. Those hypotheses concerned the following: sex, college classification, residential experience, desired level of education, desired family size, school grade in which sex education was deemed appropriate, desirability of pre-marital sexual relations, and actual pre-marital sexual experience.

Females exhibited significantly more modern sex role orientations than did males. Increased length of college experience was significantly correlated with higher sex role orientation scores. Respondents having been raised in more urbanized areas exhibited higher sex role orientations. High school type and size were not significantly related to sex role orientation scores.

Attitudes concerning desired educational attainment were positively correlated with more modern sex role orientation scores. Those individuals anticipating advanced education demonstrated higher scores.

Desired family size on the part of the respondents was negatively associated with sex role orientation modernity.

Those individuals anticipating advanced education demonstrated higher scores.

Desired family size on the part of the respondents was negatively associated with sex role orientation modernity. As the desired size of their family decreased, sex role orientation scores increased.

Although there was no significant difference in sex role orientation scores for respondents with positive and those with negative attitudes toward the desirability of sex education in the school curriculum, the grade at which sex education was most appropriate was negatively correlated with sex role orientation scores. Scores exhibited by individuals deeming early initiation of sex education were significantly more modern than those of the group choosing later grades.

Both hypotheses involving pre-marital sexual relations were accepted. Those individuals with a positive attitude toward the desirability of pre-maital sexual experience had significantly more modern sex role orientation scores. Along this same line, respondents who had experienced pre-marital sexual relations exhibited significantly higher, that is, more modern, sex role orientation scores than did the inexperienced group.

The final hypothesis testing the predictive power of a combination of parental and personal characteristics was accepted on the basis of multiple regression results for the total sample and male and female subgroups. When entered into the model sequentially, personal characteristics explained significantly more incremental variance than did parental characteristics.

Implications

Theoretical Implications

Modernization and Sex Role Orientations. The findings of this study were consistent, in part, with previous studies of social change in the area of sex roles in modernizing societies. Although the majority of the hypotheses stated were accepted, correlations between the dependendent variable, sex role orientations, and selected parental and personal characteristics were not sufficiently high in most cases to lend appreciable support to anticipated relationships. It may be that the modernization process has affected the parents of these students to the point that a more traditional perspective on sex role orientations is no longer a salient feature in Puerto Rico. Yet this cannot be documented, since it contradicts the literature presented here concerning Puerto Rican sex role orientations. Nevertheless, the fact that no parental characteristics significantly predicted female sex role orientation scores may point to differential socialization patterns for males and females which were not evident in the present study. This aspect of the study should be pursued in the future.

Individual Modernity. Three approaches to the study of modernization focus on (1) the international level, (2) the societal level, and (3) the individual level. Research dealing with individual modernity assumes that values and moti-

vations within the individual of a society either facilitate or discourage national development. A complex of values and behavior within the person predict the individual's ability to adjust psychologically to the multitude of changes imminent in a modernizing society. Sex role orientation is one element within this complex of psychological disposition. Within the narrow confines of this study, sex role orientations were found to be significantly correlated with a number of independent variables representing social, experiential, and attitudinal characteristics of the modernizing Puerto Rican environment. Nevertheless, only one conceptual area in the individual modernity model was employed in the present research. Because of this, the validity of individual modernity may only be partially eveluated. In the context of Puerto Rico, a culturally-based sex role orientation scale was employed. Its reliability across other groups within this society remains untested. Further research using this model might contribute to a better understanding of the influence of sex role orientations on general individual modernity.

It is difficult to evaluate one element of a concept and its research methods whose validity is still questionable. Armer and Schnaiberg (1972:315) contend that the concept of individual modernity may be meaningful as a distinct variable, but the measurement of modernity has apparently been unsuccessful. This author, along with other students

of modernization, suggests further investigation of individual modernity scales. The present study represents one small contribution to such a challenge.

Methodological Implications

Several implications emerge concerning the methodology used in this study. First, the development of the sex role orientation scale, the dependent variable, deserves consideration. Factor analysis of attitudinal items based on Puerto Rican sex role literature resulted in a scale designed to measure varying degrees of sex role modernity. Although analysis of responses of the total group and the male and female subgroups resulted in quite similar scales, reliability coefficients for all three scales were not extremely high; this might well suggest that the scale was a less than ideal measurement tool. Factor analysis of other Puerto Rican samples would speak for its utility.

Secondly, independent variables involved in this study may not have been acceptable characteristics with which to relate sex role orientation. This is the case in particular with the attitudinal variables. It is reasonable to believe that attitudes toward sex education, toward pre-marital sexual relations, and actual pre-marital sexual experience are sex role orientations and would obviously correlate highly with the present measurement of such orientations.

A third consideration is that the study is a result of crosscultural research efforts. Although the researchers

went to great lengths to insure the translation of an acceptable questionnaire, the fact remains that the questionnaire was designed in one culture for administration in another culturally distinct setting. The subtleties of cross-cultural research continue to hinder social scientists in their quest for decentered research methods (Werner and Campbell, 1970).

Another interesting consideration in the case of this study is the political relationship between the United States and Puerto Rico. The actual disposition of these Puerto Ricans to a study admittedly directed by mainland institutions is unknown. However, the lack of large response rates in the Agriculture and Home Economics departments may be indicative, in some way, of their receptivity to such mainland involvement.

Practical Implications

The results of this study suggest several practical implications. Perhaps the most prominent result is the obvious difference in sex role orientations exhibited by males and females. Given the traditional role of the Puerto Rican female, these findings indicate a heightened awareness among women of the non-egalitarian nature of the society in which they live. They apparently recognize the machismo ideology that has dominated sex roles up to this point in the island's history and they reject it as a viable context in which to operate. Males, on the other hand, appear to cleave to a

more traditional sex role orientation. Of course, it must be remembered that these respondents are university students whose approaches to life would most likely be less traditional. A similar survey of sex role orientations among other groups within this culture would speak for the generalizability of these findings.

The above information is potentially interesting to administrators both within the university and the Puerto Rican community at large. The findings imply that women desire a broader range of opportunities and that new alternatives be open to them. Decision-makers on all levels may be called upon to facilitate women's entrance into disciplines and positions not currently occupied by females. The Report of the Committee on the Legal Rights of Women in Puerto Rico has documented discriminatory laws and practices against women both in government and private institutions (Maldonado, 1974).

In summary, these findings imply social change in the area of sex role orientation which has accompanied the rapid industrialization and urbanization of the Free Associated State of Puerto Rico.

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